BEFORE THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

REBUTTAL TESTIMONY OF

ROBERT B. HEVERT

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2017-370-E

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, AFFILIATION, AND BUSINESS ADDRESS.

A. My name is Robert B. Hevert. I am a Partner of ScottMadden, Inc. ("ScottMadden"). My business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts, 01581.

Q. ARE YOU THE SAME ROBERT B. HEVERT WHO SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I filed Direct Testimony on behalf of South Carolina Electric & Gas Company, referred to throughout my testimony as "SCE&G," or the "Company."

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my Rebuttal Testimony is to respond to the Direct Testimony of Mr. Richard Baudino on behalf of the South Carolina Office of Regulatory Staff ("ORS") regarding the Company's Cost of Equity.

Q. HAVE YOU PREPARED ANY REBUTTAL EXHIBITS?

A. Yes. Rebuttal Exhibit No.___(RBH-1) through Rebuttal Exhibit No.___(RBH-13) have been prepared by me or under my direct supervision.

II. OVERVIEW

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF YOUR REBUTTAL TESTIMONY.

A. In my Direct Testimony, I recommended a Return on Equity ("ROE" or "Cost of Equity") of 10.75 percent, within a range of ROE estimates of 10.25

percent to 11.00 percent.[1] I have updated the Constant Growth and Multi-Stage forms of the Discounted Cash Flow ("DCF") model, Capital Asset Pricing Model ("CAPM"), Empirical Capital Asset Pricing Model ("ECAPM"), and Bond Yield Risk Premium analyses based on data through October 12, 2018 and have applied those analyses to the group of proxy companies included in my Direct Testimony. After reviewing Mr. Baudino's testimony, updating the analyses contained in my Direct Testimony, and considering other relevant data, including current and expected capital market conditions, I continue to conclude an ROE of 10.75 percent, within a range of 10.25 percent to 11.00 percent, is a reasonable estimate of the Company's Cost of Equity.

Lastly, as discussed in Section IV, my 10.75 percent ROE recommendation does not reflect the additional return likely required by investors if the ORS plan is adopted. I understand the *pro forma* Return on Equity under the ORS plan, 7.39 percent, would be achieved only after the Company writes off approximately $2.5 billion in assets.[2] Consistent with the considerations discussed in my Direct Testimony, I find the additional return required under that scenario would be significant, now in the range of 220 to 650 basis points.[3] It is my opinion that the additional return required by equity investors would be toward the upper end of that 220 to 650 basis point range.

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[1] *See* Direct Testimony of Robert B. Hevert, at 4.

[2] *See*, Rebuttal Testimony of Iris N. Griffin.

[3] *See*, Direct Testimony of Robert B. Hevert, at 76. As discussed in Section IV, the upper end of the range increased by 25 basis points, from 6.25 percent (as reported in my Direct Testimony) to 6.50 percent.

III. RESPONSE TO THE DIRECT TESTIMONY OF MR. BAUDINO AS IT RELATES TO THE COMPANY'S COST OF EQUITY

Q. PLEASE SUMMARIZE MR. BAUDINO'S ROE ANALYSES AND ROE RECOMMENDATION IN THIS PROCEEDING.

A. Mr. Baudino recommends an ROE of 9.10 percent, based on his Constant Growth DCF analyses applied to the proxy group of 22 companies used in my Direct Testimony.[4] Mr. Baudino also performs two CAPM analyses, but does not rely on that method or those results to develop his recommendation.[5]

Q. WHAT ARE THE PRINCIPAL AREAS IN WHICH YOU DISAGREE WITH MR. BAUDINO'S ROE ANALYSES?

A. The principal areas in which I disagree with Mr. Baudino include: (1) his reliance on a single method to estimate the Company's Cost of Equity; (2) Mr. Baudino's application of the Constant Growth DCF model; (3) the relevance and application of the Multi-Stage DCF analysis; (4) Mr. Baudino's inputs to the CAPM; (5) Mr. Baudino's objection to the ECAPM; (6) the informational content and relevance of the Bond Yield Plus Risk Premium analysis; and (7) the implications of capital market conditions and other factors in determining the Company's Cost of Equity.

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[4] Direct Testimony of Richard Baudino, at 3-4.

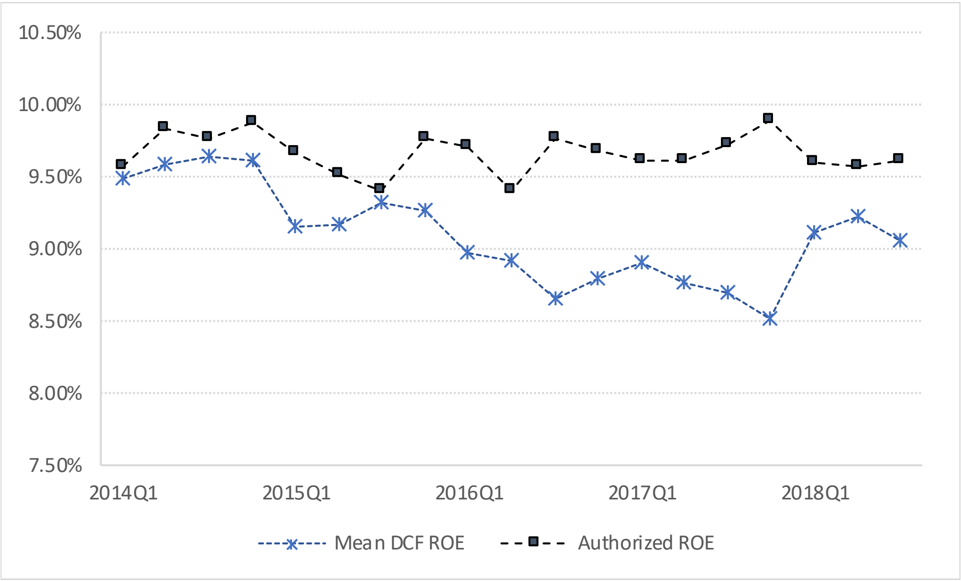
[5] *Ibid.*

Reliance on a Single Method in Estimating the Cost of Equity

Q. DO YOU AGREE WITH MR. BAUDINO'S APPROACH OF RELYING ON A SINGLE METHOD, THE CONSTANT GROWTH DCF MODEL, TO ESTIMATE THE COMPANY'S RETURN ON EQUITY?

A. No, I do not. Not only is Mr. Baudino's approach inconsistent with finance theory and practice, it is inconsistent with decisions reached by regulatory commissions over the past several years. As Chart 1 (below) demonstrates, since 2014 the Constant Growth DCF model has produced ROE estimates consistently and meaningfully below returns then-authorized by regulatory commissions. Quite simply, for several years, the DCF method has produced unduly low estimates of the Cost of Equity and regulatory decisions have reflected that understanding.

Chart 1: Authorized ROEs vs DCF Estimates[6]



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[6] DCF results based on quarterly average stock prices, Earnings Per Share growth rates from Value Line, Zacks, and First Call; assumes my proxy group. Authorized ROEs are quarterly averages for electric utilities;

Q. IS THE USE OF MULTIPLE METHODS CONSISTENT WITH FINANCIAL THEORY AND PRACTICE?

A. Yes, it is. As Dr. Morin notes:

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate the theory. The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use.
>
> No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. [7]

Professor Eugene Brigham, a widely-respected finance scholar, recommends the CAPM, DCF, and Bond Yield Plus Risk Premium approaches:

> Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the bond-yield-plus-risk-premium approach. These methods are not mutually exclusive – no method dominates the others, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand.[8]

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source: S&P Global Market Intelligence. Please note that third quarter 2015 included only two ROE decisions, and first quarter 2017 includes only one ROE decision.

[7] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 428.

[8] *Ibid*., at 430-431, citing Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed., 1994, at 341.

Similarly, Dr. Morin (quoting, in part, Professor Stewart Myers), stated:

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, only a fool throws away useful information. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data.
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> ***
>
> While it is certainly appropriate to use the DCF methodology to estimate the cost of equity, there is no proof that the DCF produces a more accurate estimate of the cost of equity than other methodologies. Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings in contrast to its virtual disappearance in academic textbooks does not make it superior to other methods. The same is true of the Risk Premium and CAPM methodologies.[9]

The point is that the use of multiple methods is consistent with finance theory and regulatory practice. Mr. Baudino's approach of relying on the DCF method, on the other hand, is atypical among investors and in my experience, among regulatory commissions.[10]

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[9] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 430-431.

[10] As discussed below, the Federal Energy Regulatory Commission recently has found that relying on multiple methods, including those I have applied in this proceeding, is consistent with investor practice.

Q. AT PAGE 41 OF HIS TESTIMONY, MR. BAUDINO SUGGESTS THE COMMISSION RECOGNIZE THAT NONE OF THE ROE ESTIMATION MODELS "STRICTLY ADHERE TO THEIR UNDERLYING ASSUMPTIONS 100% OF THE TIME." DOES THAT SUGGESTION AFFECT YOUR VIEW REGARDING THE WEIGHT MR. BAUDINO GIVES THE DCF MODEL?

A. No, it does not. Mr. Baudino seems to argue that relying on a single method is reasonable because no method's assumption "strictly adheres" to market conditions at all times. The relevant issue, however, is not whether a particular model's assumptions are consistent with market conditions "100% of the time", it is whether they are so misaligned with the current market that the model's results are far removed from current and relevant benchmarks. Here, the average of Mr. Baudino's two DCF methods is less than 9.00 percent,[11] approximately 60 basis points below the average authorized ROE he notes at page 44 of his testimony, and some 125 basis points below the Company's currently-authorized ROE. In my view, Mr. Baudino's adherence to a single model that produces results far removed from the returns available to other utilities runs counter to the Commission's finding that "[t]he rate of return is not formula-based, but requires an informed expert judgment by the Commission balancing the interests of shareholders and customers."[12]

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[11] ORS Exhibit RAB-4, Page 2 of 2.

Equally important, the DCF, CAPM, ECAPM, and Bond Yield Plus Risk Premium methods provide different perspectives and capture alternative aspects of investor behavior. Each of those perspectives is important, especially when we consider that models are meant to estimate an unobservable parameter (the Cost of Equity) that is set by the buying and selling decisions of individual investors. Those decisions are motivated by any number of factors and we cannot assume one model reasonably captures all such factors for all investors.

Q. IS MR. BAUDINO CORRECT WHEN HE ASSERTS THAT YOU PRIMARILY RELIED ON THE RESULTS OF ONE METHOD, THE CAPM?[13]

A. No, he is not. As I stated in my Direct Testimony:

> *Based on the full range of DCF and Risk Premium-based estimates and considering other model results and data available to investors*, the recent performance of electric utility stocks relative to the broad market, the recent actions by Moody's, and the potential effect of the [Tax Cut and Jobs Act], I continue to believe the Company's Cost of Equity falls in the range of 10.25 percent to 11.00 percent, with 10.75 percent as a reasonable point estimate.[14]

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[12] *See* Direct Testimony of Robert B. Hevert, at 12. *See also,* Public Service Comm'n of South Carolina, Docket No. 2009-489-E, Order No. 2010-471 dated July 15, 2010, pp. 30 *citing* Docket No. 2004-178-E, Order No. 2005-2 dated January 6, 2005, p. 85. *See also,* Public Service Comm'n of South Carolina, Docket No. 2012-218-E, Order No. 2012-951 dated December 20, 2012, pp. 41-42.

[13] Direct Testimony of Richard Baudino, at 39.

[14] Direct Testimony of Robert B. Hevert, at 60. [*emphasis,* clarification added]

Application of the Constant Growth DCF Analysis

Q. PLEASE BRIEFLY DESCRIBE MR. BAUDINO'S CONSTANT GROWTH DCF ANALYSIS AND RESULTS.

A. Mr. Baudino calculates an average dividend yield of 3.40 percent by dividing each proxy company's annualized dividend by its monthly average stock price for the six-month period ending August 2018.[15] For the expected growth rate, Mr. Baudino relies on Earnings Per Share growth rate projections from Value Line, Zacks, and First Call, and Dividend Per Share growth rate projections from Value Line.[16] Mr. Baudino then calculates DCF results based on the mean and median growth rate of the four sources noted above, producing eight ROE estimates, ranging from 8.30 percent to 9.48 percent.[17] Mr. Baudino refers to the DCF results produced using mean growth rates as "Method 1", and DCF results produced using median growth rates as "Method 2"; those two "Methods" produced point estimates of 9.09 percent and 8.86 percent, respectively.[18]

Q. DO YOU AGREE WITH MR. BAUDINO THAT DIVIDEND GROWTH RATES ARE APPROPRIATE MEASURES OF EXPECTED GROWTH FOR THE CONSTANT GROWTH DCF MODEL?

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[15] Direct Testimony of Richard Baudino, at 23.

[16] *Ibid*., at 25.

[17] *Ibid*., at 26.

[18] *Ibid*.

A. No, I do not. As discussed in my Direct Testimony, academic literature supports the use of earnings growth rates in the DCF model.[19] In large measure, that support reflects the fundamental understanding that earnings growth supports the ability to pay dividends. As noted in my Direct Testimony, to reduce growth to a single measure in the Constant Growth DCF model we must assume a fixed payout ratio, and a single, constant growth rate for Earnings Per Share ("EPS"), Dividends Per Share ("DPS"), and Book Value Per Share ("BVPS").[20] Rebuttal Exhibit No.___(RBH-7) illustrates that under the strict assumptions of the Constant Growth DCF model, EPS, DPS, BVPS, and stock prices all grow at the same, constant rate in perpetuity.

Fundamentally, the ability to pay dividends depends on expected earnings. Because dividend policy contemplates multiple factors, including the disproportionately negative effect on prices resulting from dividend cuts as opposed to dividend increases, in the short-run dividend growth may be disconnected from earnings growth. In the long-run, however, dividends cannot be increased without earnings growth. Moreover, because investors often assess stock values on the basis of Price/Earnings ("P/E") ratios, it is important to consider whether the growth rates used in the DCF model are related to those valuations.

Lastly, Value Line is the only service on which Mr. Baudino relies that provides DPS growth projections. To the extent that the earnings projections services such as Zacks and First Call represent consensus estimates, the results are less likely to be skewed in one direction or another as a result of an individual analyst.

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[19] *See* Direct Testimony of Robert B. Hevert, at 23-25.

[20] *Ibid.,* at 23.

Q. HAVE YOU UNDERTAKEN ANY ANALYSES TO DETERMINE WHETHER PROJECTED DIVIDEND GROWTH RATES OR EARNINGS GROWTH RATES BETTER EXPLAIN UTILITY VALUATION LEVELS?

A. Yes, I have. My analyses are based on the approach developed by Professors Carleton and Vander Weide, who performed a comparison of the predictive capability of historical growth estimates and analysts' consensus forecasts of five-year earnings growth for the stock prices of sixty-five utility companies. I structured the analysis to examine the statistical relationship between the P/E ratios of the proxy group companies and the projected Earnings Per Share, and Dividend Per Share growth rates reported by Value Line. To determine whether either or both rates are statistically related to stock valuations, I performed a series of regression analyses in which the projected growth rates were explanatory variables and the P/E ratio was the dependent variable. The results of those analyses are presented in Rebuttal Exhibit No.___(RBH-8).

In the first set of analyses I considered each growth rate separately (i.e., I performed separate regressions with P/E as the dependent variable and projected Earnings Per Share, and Dividends Per Share growth, respectively, as the independent variables). To ensure those individual analyses did not bias my results, I also performed a single regression analysis that included both variables as potential explanatory variables. I then reviewed the T and F Statistics to determine whether the variables and equations were statistically significant.

Q. WHAT DID YOUR ANALYSES REVEAL?

A. As shown in Rebuttal Exhibit No.___(RBH-8), the results demonstrate that the only positive, statistically significant growth rate was projected Earnings Per Share growth. That is, Dividend Per Share growth was not directly related to valuation levels. Those analyses support my view that projected Earnings Per Share is the proper measure of expected growth in the DCF model.

Q. MR. BAUDINO ASSERTS YOU ARE CRITICAL[21] OF THE DCF MODEL'S ASSUMPTIONS. IS HE CORRECT?

A. No, he is not. My Direct Testimony noted the model's assumptions and discussed the extent to which those assumptions are consistent with current and expected market conditions, or not. My discussion is not a criticism of the model or of the market prices that are applied to it. Rather, it is a practical consideration of whether the model's fundamental assumptions are reasonably aligned with actual market conditions.

As Mr. Baudino explains,[22] the Constant Growth DCF model often is given as:

$$k = \frac{D_1}{P_0} + g \qquad [1]$$

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[21] *See* Direct Testimony of Richard Baudino, at 41.

[22] *Ibid*., at 22.

That form is a simplified version of the full Discounted Cash Flow model,

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \qquad [2]$$

where P_0 is the current price, D_1 through D_∞ are annual dividends, and k is the Cost of Equity.[23] The Constant Growth form (that is, Equation [1]) assumes investors apply the present value analysis described in Equation [2] to determine the "intrinsic value", or the price they are willing to pay, for a share of common stock. The simplified version explained in Mr. Baudino's testimony (Equation [1]) therefore will not produce accurate estimates of the market-required ROE if the market price diverges from intrinsic value.

Differences between market prices and intrinsic value can and do arise for various reasons. As noted earlier, the DCF model requires several strict, often limiting assumptions, including: (1) earnings, book value, and dividends all grow at the same, constant rate in perpetuity; (2) the dividend payout ratio remains constant in perpetuity; (3) the P/E multiple remains constant in perpetuity; (4) the discount rate (that is, the estimated Cost of Equity) is greater than the expected growth rate; and (5) the calculated Cost of Equity remains constant, also in perpetuity.[24] To the extent those assumptions do not align with market conditions, intrinsic value may deviate from the market price and the Constant Growth DCF model will produce unreliable results.

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[23] This is the same equation Mr. Baudino provides at page 21 of his testimony. There, he defines the prices as the "asset value".

[24] *See* Direct Testimony of Robert B. Hevert, at 21.

Q. ARE THERE VISIBLE REASONS WHY THE CALCULATED INTRINSIC VALUE LIKELY DEVIATED FROM THE OBSERVED MARKET PRICE?

A. Yes. We know, for example, that the Federal Reserve now is in the process of unwinding nearly $4 trillion of assets it purchased during its Quantitative Easing initiatives. Those asset purchases were made with the explicit intent of reducing long-term interest rates.[25] Because they now are in the process of being unwound, the asset purchases' effect on interest rates will diminish over time. We therefore cannot assume the Cost of Equity estimate produced by the Constant Growth DCF model today will be fundamentally consistent with the estimate it produces going forward.

Differences between market prices and intrinsic valuations also may arise when investors take short-term trading positions to hedge risk (*e.g.*, a "flight to safety"), to speculate (*e.g.*, momentum trades), or as temporary position to increase current income (*i.e.*, a "reach for yield"). Those motivations, including a "reach for yield", also may be related to evolving Federal monetary policy. It is difficult, therefore, to have a reasonable degree of confidence that the Constant Growth DCF model's fundamental assumptions so fully align with current market conditions, and that its results are so reasonable that it should be given principal – or sole –weight in determining the Company's Cost of Equity.

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[25] *See* Federal Reserve Press Release, dated June 19, 2013.

Q. PLEASE BRIEFLY DESCRIBE MR. BAUDINO'S SPECIFIC CONCERNS WITH YOUR ARGUMENTS REGARDING THE DCF MODEL'S UNDERLYING ASSUMPTIONS.

A. Mr. Baudino disagrees with my concerns that recent deviations of the industry payout ratio and the P/E ratio from their respective long-term averages likely have skewed the DCF model results. In his view, those departures do not raise methodological issues because markets are efficient, and prices reflect such concerns.[26]

Q. WHAT IS YOUR RESPONSE TO MR. BAUDINO ON THAT POINT?

A. The issue is not whether markets are efficient, it is whether the DCF model best reflects investors' expectations and risk perceptions. Market efficiency is a question of the extent to which information is fully captured in market prices, not whether the Constant Growth DCF model is the best measure of investors' return requirements. Mr. Baudino's position appears to be that if markets are efficient, the Constant Growth DCF model is the only method needed to estimate the Cost of Equity. Of course, that is not the case. If investors understand, for example, that payout ratios will increase over time (as they would in a strongly efficient market), the Constant Growth DCF model would not accommodate that understanding.

It is because asset pricing is complex that multiple methods have been developed to estimate the Cost of Equity.[27] The Efficient Market Hypothesis

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[26] Direct Testimony of Richard Baudino, at 42.

[27] Direct Testimony of Robert B. Hevert, at 19-20.

("EMH") to which Mr. Baudino refers assumes investors use them all. In that important sense, Mr. Baudino's principal reliance on the DCF model – and his focus its results – is at odds with the EMH.

Q. WHAT IS YOUR RESPONSE TO MR. BAUDINO'S CONCERN WITH YOUR ASSUMPTION REGARDING PAYOUT RATIOS?

A. As explained in my Direct Testimony, it is reasonable to assume near-term payout ratios will revert to the long-term industry average over the Constant Growth DCF model's perpetual horizon.[28] There are several reasons why management may adjust dividend payments in the near term, such as increases or decreases in expected capital spending. Because we cannot say those factors will remain constant forever, it is reasonable to assume over time, payout ratios will revert to their long-term average.

Several of our proxy companies recently have discussed target payout ratios that are highly consistent with my 65.57 percent assumption. For example, in recent investor relations presentations, ALLETE, Inc., Alliant Energy, NorthWestern Corporation, and WEC Energy Group noted target payout ratios in the range of 60.00 percent to 70.00 percent.[29] Because my projected payout ratio is consistent with both historical experience and industry expectations, it is entirely appropriate.

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[28] *Ibid*., at 29-30.

[29] ALLETE Inc., Investor Presentation, September 13, 2018; Alliant Energy, Wolfe Research Utilities & Energy Conference, October 2-3, 2018; NorthWestern Energy, Bank of America Merrill Lynch Texas Power & Utilities Mini Conference, September 27, 2018; and WEC Energy Group, Investor Update, September 2018.

In that regard, it is the Constant Growth DCF model relied on by Mr. Baudino (which assumes that payout ratios will remain unchanged in perpetuity) that is inconsistent with investor expectations.

Q. WHAT IS YOUR RESPONSE TO MR. BAUDINO'S CONCERN WITH YOUR ASSUMPTION REGARDING P/E RATIOS?

A. Mr. Baudino asserts that "current stock prices are reflective of investors' required ROE."[30] As noted above, however, differences between market prices and intrinsic value may arise when investors take short-term trading positions to hedge risk, to speculate, or as temporary position to increase current income. The equity valuation levels recently observed more likely arose from the "reach for yield" that sometimes occurs during periods of low Treasury yields. During those periods, some investors would turn to dividend-paying sectors, such as utilities, as an alternative source of income (that is, for the dividend yield). Then, when interest rates increased, investors rotated out of the utility sector, causing prices to fall.

As Mr. Baudino recognizes, interest rates are expected to increase.[31] Consequently, it is unreasonable to place significant weight on the Constant Growth DCF model's results when the assumptions underlying that model are plainly inconsistent with market expectations.

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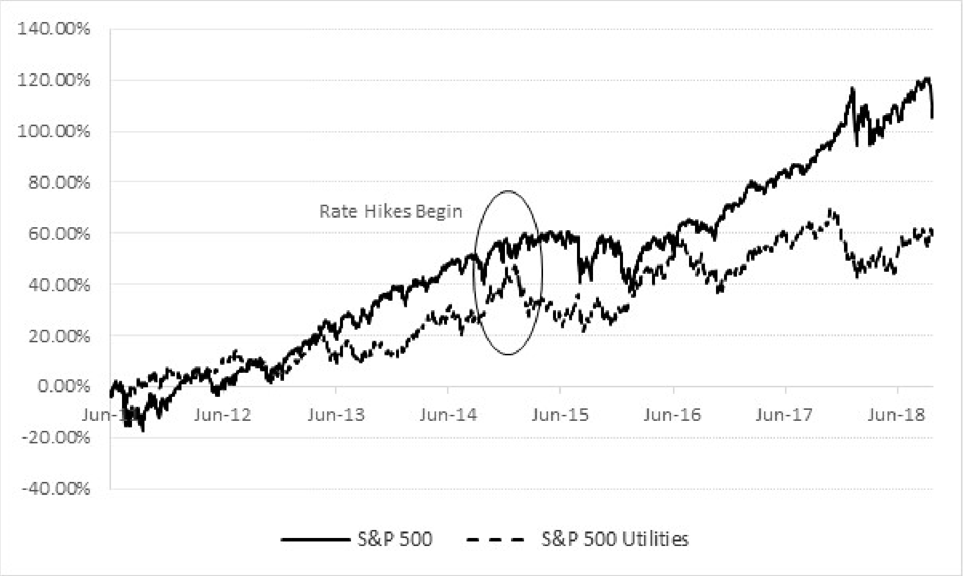
[30] Direct Testimony of Richard Baudino, at 42.

[31] *See Ibid.*, at 9-10.

Q. HAVE THERE BEEN RECENT PERIODS WHEN UTILITY VALUATION LEVELS WERE HIGH RELATIVE TO BOTH THEIR LONG-TERM AVERAGE AND THE MARKET?

A. Yes. For example, between July and December 2016, the S&P Electric Utility Index lost approximately 9.00 percent of its value. At the same time, the S&P 500 increased by approximately 7.00 percent, indicating that the utility sector under-performed the market by about 16.00 percent. Also during that time, the 30-year Treasury yield increased by as much as approximately 95 basis points (an increase of nearly 45.00 percent). More recently, between January and March 2018, the S&P Electric Utility Index lost approximately 7.00 percent of its value while the S&P 500 increased by approximately 2.00 percent, an under-performance of about 9.00 percent, as the 30-year Treasury yield increased by nearly 40 basis points. In each case, as interest rates increased utility valuations fell. As shown in Chart 2, below, since the Federal Reserve began raising interest rates in 2015, utilities (as measured by the S&P 500 Utilities Index) have underperformed the broad market by a substantial margin.

Chart 2: S&P 500 Utilities vs S&P 500 Returns[32]



Multi-Stage DCF Analysis

Q. WHAT ARE MR. BAUDINO'S CONCERNS WITH YOUR MULTI-STAGE DCF ANALYSIS?

A. Mr. Baudino considers it "highly unlikely" that investors undertake Multi-Stage DCF analyses, and is concerned I have provided no evidence that investors (1) use Gross Domestic Product ("GDP") growth in their evaluation, or (2) rely on payout ratio assumptions similar to those included in my Multi-Stage DCF analysis.[33] Mr. Baudino also suggests my GDP growth rate estimate is overstated.[34]

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[32] Source: S&P Global Market Intelligence.

[33] Direct Testimony of Richard Baudino, at 49.

[34] *Ibid.* at 49-50.

Q. DO YOU AGREE WITH MR. BAUDINO'S SUGGESTION THAT IT IS "HIGHLY UNLIKELY" THAT INVESTORS USE MULTI-STAGE DCF MODELS?

A. No, I do not. Mr. Baudino has provided no basis to assume investors would prefer the limited structure of the Constant Growth DCF model to the more flexible Multi-Stage form. As to the use of Multi-Stage models, Dr. Morin notes it is "consistent with current valuation practices of institutional investors and is a common estimation technique used by financial analysts."[35] Similarly, Morningstar describes a three-stage DCF approach generally consistent with the model included in my Direct Testimony) in which the final stage assumes that long-run growth moves toward that of the overall economy.[36]

Q. IS GDP COMMONLY USED AS A LONG-TERM GROWTH RATE ASSUMPTION?

A. Yes, it is. The use of expected long-term GDP growth in the terminal period is consistent with practice and financial literature.[37] Morningstar, for example, describes an approach for calculating the long-term growth estimate that is similar to that which is included in my model.[38] As with my approach, Morningstar's method combines the historical average real GDP growth rate with a measure of inflation calculated using the TIPS spread.[39]

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[35] Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 266.

[36] *See* Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 50-52.

[37] Dr. Roger Morin, for example, writes "[i]t is useful to remember that eventually all company growth rates, especially utility services growth rates, converge to a level consistent with the growth rate of the aggregate economy." *See* Roger A. Morin, New Regulatory Finance, Public Utilities Report, Inc., 2006, at 308.

[38] *See* Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 50-52.

Nonetheless, if Mr. Baudino is of the view that (1) the Constant Growth DCF model is the better alternative, and (2) expected GDP growth is not a relevant measure of terminal growth, I have addressed those concerns by calculating the terminal value by reference to the proxy companies' recent P/E ratios.[40]

Q. MR. BAUDINO POINTS TO METHODS THAT HAD BEEN ADOPTED BY THE FEDERAL ENERGY REGULATORY COMMISSION ("FERC") TO SUPPORT HIS VIEW THAT YOUR TERMINAL GROWTH RATE IS TOO HIGH.[41] WHAT IS YOUR RESPONSE TO MR. BAUDINO ON THAT POINT?

A. First, the 5.45 percent long-term growth rate used in the Multi-Stage DCF model in my Direct Testimony is within the bounds of the long-term growth estimates Mr. Baudino uses in his Constant Growth DCF analysis (mean growth rates ranging from 5.22 percent to 5.98 percent, and median growth rates ranging from 4.82 percent to 5.75 percent).[42] As to the Social Security Administration's

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[39] Implied Expected Nominal GDP = ((1 + Historical Real GDP Growth) x (1 + Implied Forward Inflation)) – 1, or 5.45% = ((1 + 3.21%) x (1 + 2.16%)) – 1.

[40] As noted earlier, the Constant Growth DCF model assumes a constant P/E ratio, in perpetuity. *See* Rebuttal Exhibit No.___(RBH-7).

[41] Direct Testimony of Richard Baudino, at 49-50.

[42] ORS Exhibit RAB-4.

("SSA") GDP growth rate forecast Mr. Baudino cites,[43] my growth rate estimate falls within the range of the "cases" SSA considers.[44]

Second, although Mr. Baudino argues my long-term GDP growth rate is overstated based on his understanding of the method used by FERC Staff,[45] FERC found mean DCF model results based on that approach to be understated. In Opinion No. 531, FERC noted the anomalous nature of prevailing capital markets make it more difficult to determine the rate of return needed to satisfy the *Hope* and *Bluefield* standards and expressed concern that economic anomalies may have affected the reliability of DCF analyses.[46] FERC concluded that a mechanical application of the DCF approach would be inappropriate and found it necessary to review alternative benchmark methods, including the Bond Yield Plus Risk Premium and CAPM approaches, to gain insight into the effect of market conditions on the Cost of Equity.[47]

In its October 16, 2018 *Order Directing Briefs*, FERC found that although it "previously relied solely on the DCF model to produce the evidentiary zone of reasonableness…", it is "…concerned that relying on that methodology alone will not produce just and reasonable results.”[48] As FERC explained, because the Cost of Equity depends on what the market expects, it is important understand “how investors analyze and compare their investment opportunities.”[49] FERC also explained that although certain investors may give some weight to the DCF approach, other investors “place greater weight on one or more of the other methods…”[50] Those methods include the CAPM, Expected Earnings approach, and the Risk Premium method, all of which I have applied in this proceeding.[51]

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[43] Direct Testimony of Richard Baudino, at 49-50.

[44] Tables V.B.1 and V.B.2 of the 2017 *Annual Report of The Board of Trustees of The Federal Old-Age And Survivors Insurance And Federal Disability Insurance Trust Funds* includes "Low-cost" and "High-cost" scenario assumptions of 2.90 percent and 1.50 percent for the GDP Price Index, and Real GDP Growth 2.70 percent and 1.30 percent, respectively, over the period 2026 through 2090. When combined, those projections indicate nominal GDP growth in the range of 2.82 percent to 5.68 percent.

[45] Direct Testimony of Richard Baudino, at 49-50.

[46] *See Coakley v. Bangor Hydro-Electric Co*., Opinion No. 531, 147 FERC ¶ 61,234, at para. 41, 145.

[47] *Ibid*., para. 42,145-146.

In summary, FERC’s recent Order explains that the investor-required Return on Equity should be determined based on multiple methods; it should not rely on one method, as Mr. Baudino’s approach does.

Capital Asset Pricing Model

Q. PLEASE SUMMARIZE MR. BAUDINO’S CAPM ANALYSES.

A. Mr. Baudino performs two sets of CAPM analyses. His first set calculates two Market Risk Premium (“MRP”) measures, which rely on the forecasted market total return as determined using Value Line projections, and six-month averages of five and 30-year Treasury security yields (*i.e.*, 2.75 percent and 3.07 percent, respectively). Mr. Baudino assumes a total growth rate for the market of 10.25 percent, using the average of the book value and earnings growth forecasts (8.50

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[48] Docket No. EL11-66-001, *et al.*, *Order Directing Briefs*, para. 30.

[49] *Ibid.*, para. 33.

[50] *Ibid.*, para. 35.

[51] Table 6 provides the expected Return on Average Common Equity for the proxy companies, which relates to the “Expected Earnings” approach.

percent and 12.00 percent, respectively) for all companies covered by Value Line. Mr. Baudino combines that average growth rate with Value Line's average expected dividend yield of 0.95 percent for the same group of companies, which results in an estimated market return of 11.25 percent. He then averages that estimate with Value Line's projected annual total return of 10.00 percent to arrive at his final expected market return of 10.62 percent.[52]

Mr. Baudino's two MRP measures represent the difference between (1) his calculated expected market total return, and (2) the average yield over the past six months on five- and 30-year Treasury securities. Mr. Baudino arrives at his CAPM results using his average Value Line Beta coefficient of 0.66 for the proxy companies.[53]

Mr. Baudino's second set of CAPM analyses calculate the geometric and arithmetic mean long-term annual returns on stocks, and long-term annual income returns on long-term government bonds, resulting in two historical measures of the MRP.[54] Mr. Baudino uses those two MRP measures in combination with the 30-year Treasury bond yield and the average Value Line Beta coefficient to calculate two additional CAPM results. Lastly, Mr. Baudino considers an adjusted historical

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[52] Direct Testimony of Richard Baudino, at 29, ORS Exhibit RAB-5.

[53] *Ibid.*, ORS Exhibit RAB-5.

[54] *Ibid.*, at 30, ORS Exhibit RAB-6.

MRP calculated by Dr. Roger Ibbotson and Dr. Peng Chen, and reported by Duff & Phelps.[55]

Although Mr. Baudino advises the Commission to consider only his DCF estimates, he reports CAPM results ranging from 7.97 percent to 8.08 percent for his forward-looking return analysis, and 6.52 percent to 7.78 percent for his historical returns analysis.[56]

Q. DO YOU AGREE WITH MR. BAUDINO'S CAPM ANALYSES AND HIS INTERPRETATION OF THEIR RESULTS?

A. No, there are two areas in which I disagree with Mr. Baudino: (1) the term of the Treasury security used as the risk-free rate component of the model; and (2) the calculation of the MRP.

Q. TURNING FIRST TO THE RISK-FREE RATE COMPONENT, WHY DO YOU DISAGREE WITH MR. BAUDINO'S USE OF FIVE- TREASURY SECURITIES AS THE MEASURE OF THE RISK-FREE RATE?

A. I disagree with his use of the five-year Treasury yield for the same reason we agree the 30-year yield is appropriate: the tenor of the risk-free rate used in the CAPM should match the life (or duration) of the underlying investment. As noted by Morningstar:

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the time horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-

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[55] *Ibid.*, at 31, ORS Exhibit RAB-6.

[56] *Ibid.*, at 32.

> term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[57]

Pratt and Grabowski recommend a similar approach to selecting the risk-free rate: "[i]n theory, when determining the risk-free rate and the matching [Equity Risk Premium] you should be matching the risk-free security and the [Equity Risk Premium] with the period in which the investment cash flows are expected."[58] The Chartered Financial Analyst program also notes the risk-free rate used in the CAPM should match the timing of the expected asset's cash flows:

> A risk-free asset is defined here as an asset that has no default risk. A common proxy for the risk-free rate is the yield on a default-free government debt instrument. In general, the selection of the appropriate risk-free rate should be guided by the duration of projected cash flows. If we are evaluating a project with an estimated useful life of 10 years, we may want to use the rate on the 10-year Treasury bond.[59]

One measure of the term of expected cash flows is Equity Duration. In finance, "duration" (whether for bonds or equity) typically refers to the present value weighted time to receive the security's cash flows. In terms of its practical application, duration is a measure of the percentage change in the market price of a given stock in response to a change in the implied long-term return of that stock. A common investment strategy is to "immunize" the portfolio by matching the duration of investments with the term of the underlying asset in which the funds are invested, or the term of a liability being funded.

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[57] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.

[58] Shannon Pratt and Roger Grabowski, Cost of Capital: Applications and Examples, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92. [clarification added]

[59] 2011 CFA Curriculum Level I, Volume 4 at 52.

As demonstrated in Rebuttal Exhibit No.___(RBH-9), the average Equity Duration of the proxy group companies is approximately 31.48 years.[60] Given that relatively long Equity Duration, and knowing that utility assets are comparatively long-lived, I continue to believe that it is appropriate to use the long-term Treasury yield as the measure of the risk-free rate.

Q. DOES MR. BAUDINO'S OBSERVATION THAT "THE LONGER THE DURATION OF THE BOND, THE GREATER THE INTEREST RATE RISK"[61] CHANGE YOUR POSITION?

A. No, it does not. If Mr. Baudino is concerned with interest rate risk, he should use the 30-day Treasury bill yield as the risk-free rate. Because he did not, it appears Mr. Baudino sees the issue as a matter of degree, recommending the five-year Treasury bond because it is a shorter-duration security than the 30-year bond. As discussed above, however, the relevant perspective is duration matching, not the duration of a given Treasury security in isolation.

Here, the average Equity Duration for the proxy group is 31.48 years. In comparison, the current duration of five-year and 30-year Treasuries are 4.72 and 19.73 years, respectively.[62] Even though the duration of the 30-year Treasury yield falls short of the average Equity Duration for the proxy group, it provides the longest available duration and, therefore, is the proper security for his CAPM analyses.

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[60] It is notable that Mr. Baudino relies heavily on the DCF method, which assumes cash flows in perpetuity.

[61] Direct Testimony of Richard Baudino, at 47.

[62] *See* Rebuttal Exhibit No.___(RBH-10)

Q. PUTTING ASIDE THE ISSUE OF EQUITY DURATION, DOES MR. BAUDINO'S DCF MODEL RECOGNIZE THE PERPETUAL NATURE OF EQUITY?

A. Yes, it does. As Mr. Baudino correctly observes, the Constant Growth DCF model has an infinite horizon.[63] If it did not, the model would produce implausibly low results. As shown in Rebuttal Exhibit No.___(RBH-11), for example, an assumed holding period of five years produces mean and median ROE estimates of negative 37.06 percent and negative 37.36 percent, respectively. The only way Mr. Baudino's DCF results could be realized is if the shares were sold at the end of the five-year holding period, and the prices at which they are sold reflect cash flows in perpetuity. The risk-free rate therefore should reflect the perpetual nature of equity. Again, because the longest-dated Treasury security is 30 years, that is the appropriate term for this purpose.

Q. WHAT ARE YOUR CONCERNS REGARDING MR. BAUDINO'S *EX-ANTE* MRP CALCULATIONS?

A. Mr. Baudino calculates the expected market return using an average of earnings growth projections (12.00 percent) and book value growth projections (8.50 percent).[64] As noted above, academic research indicates investors rely on estimates of earnings growth in arriving at their investment decisions. In that regard, Mr. Baudino did not include book value growth projections in his DCF analysis, nor has he explained why it is reasonable to include those growth rates in his MRP analysis but exclude them from his DCF analyses. Excluding book value growth estimates from Mr. Baudino's market return calculation would increase his MRP estimate by approximately 85 basis points.

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[63] Direct Testimony of Richard Baudino, at 21.

[64] *Ibid.*, at 29; ORS Exhibit RAB-5, page 2.

Q. DO YOU AGREE WITH MR. BAUDINO'S USE OF HISTORICAL ESTIMATES OF THE MARKET RISK PREMIUM?

A. No, I do not. The Market Risk Premium represents the additional return required by equity investors to assume the risks of owning the "market portfolio" of equity relative to long-term Treasury securities. As with other elements of Cost of Equity analyses, the MRP is meant to be a forward-looking parameter. Simply relying on an MRP calculated using historical returns may produce results that are inconsistent with investor sentiment and current conditions in capital markets. For example, Morningstar observes:

> It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward-looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.[65]

A Market Risk Premium calculated using historical market returns, on the other hand, does not necessarily reflect investors' expectations or, for that matter, the relationship between the Market Risk Premium and interest rates. The relevant analytical issue in applying the CAPM is to ensure that all three components of the model (*i.e.*, the risk-free rate, Beta, and the MRP) are consistent with market conditions and investor expectations. Therefore, *ex-ante* CAPM analyses are the more appropriate method to estimate SCE&G's Cost of Equity.

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[65] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 53.

Q. PLEASE BRIEFLY SUMMARIZE MR. BAUDINO'S COMMENTS REGARDING YOUR *EX-ANTE* CAPM ANALYSES.

A. Mr. Baudino disagrees with my *ex-ante* Market Risk Premium, arguing that the underlying growth rates "are by no means long-run sustainable growth rates."[66] Mr. Baudino further suggests the forecasted Treasury bond yields applied in my CAPM analyses are "speculative at best and may never come to pass."[67]

Q. DO YOU AGREE WITH MR. BAUDINO'S CONCERNS IN THAT REGARD?

A. No, I do not. The market return estimates presented in my Direct Testimony, which Mr. Baudino deems unsustainable, represent approximately the 53rd and 54th percentiles of the actual returns observed from 1926 to 2017.[68] Moreover, because market returns historically have been volatile, my market return estimates are statistically indistinguishable from the long-term arithmetic average market data provided by Duff and Phelps.[69]

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[66] Direct Testimony of Richard Baudino, at 47.

[67] *Ibid*., at 45.

[68] Source: Duff and Phelps, 2018 SBBI Yearbook, Appendix A-1.

Regarding the use of projected interest rates, it is important to remember that, as Mr. Baudino states, the "[r]eturn on equity analysis is a forward-looking process."[70] In that regard, I have considered forward-looking estimates of the risk-free rate. Because my analyses are predicated on market expectations, the expected increase in Treasury yields (as reflected in consensus projections) is a measurable and relevant data point.

Empirical Capital Asset Pricing Model

Q. PLEASE SUMMARIZE MR. BAUDINO'S POSITION REGARDING THE EMPIRICAL CAPITAL ASSET PRICING MODEL.

A. Mr. Baudino believes that the use of "an adjustment factor to 'correct' the CAPM results" suggests that published Beta coefficients are "incorrect" and should not be relied on.[71]

Q. IS MR. BAUDINO CORRECT?

A. No, he is not. The ECAPM reflects published research finding companies with lower Beta coefficients tend to have higher returns than those predicted by the CAPM, and those with higher Beta coefficients tend to have lower returns than expected.[72] Beta coefficient adjustments such as those used by Value Line on the other hand, address the tendency of "raw" Beta coefficients to regress toward the market mean of 1.00 over time. The two are different issues and are addressed with different methods.

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[69] Source: Duff and Phelps, 2018 SBBI Yearbook, Appendix A-1. Even if we were to look at the standard error, my estimate is well within one standard error of the long-term average.

[70] Direct Testimony of Richard Baudino, at 25.

[71] *Ibid.*, at 48.

Fama and French succinctly describe the empirical issue addressed by the ECAPM when they note that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low."[73] Similarly, Dr. Roger Morin observes that "[w]ith few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted."[74] As Dr. Morin also explains, the ECAPM "makes use" of those findings, and estimates the Cost of Equity based on the following equation:[75]

$$k_e = R_f + \alpha + \beta(MRP - \alpha) \qquad [3]$$

where α, or "alpha," is an adjustment to the risk/return line, and "MRP" is the Market Risk Premium (defined above). Summarizing empirical evidence regarding the range of estimates for alpha, Dr. Morin explains that the model "reduces to the following more pragmatic form"[76] used in my Direct Testimony:

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[72] Direct Testimony of Robert B. Hevert, at 38-39. *See also*, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 175-176.

[73] Eugene F. Fama and Kenneth R. French, The Capital Asset Pricing Model: Theory and Evidence, Journal of Economic Perspectives, Vol. 18, No. 3, Summer 2004, at 33.

[74] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 175.

[75] *Ibid.*, at 189.

$$k_e = R_f + 0.25(R_m - R_f) + 0.75\beta(R_m - R_f) \quad [4]$$

where:

k_e = the investor-required ROE;

R_f = the risk-free rate of return;

β = Adjusted Beta coefficient of an individual security; and

R_m = the required return on the market.

The relationship between expected returns from the CAPM and ECAPM can be seen in Chart 3, below. That chart, which reflects Mr. Baudino's risk-free rate and MRP, illustrates the extent to which the CAPM under-states the expected return relative to the ECAPM when Beta coefficients, whether adjusted or unadjusted, are less than 1.00.

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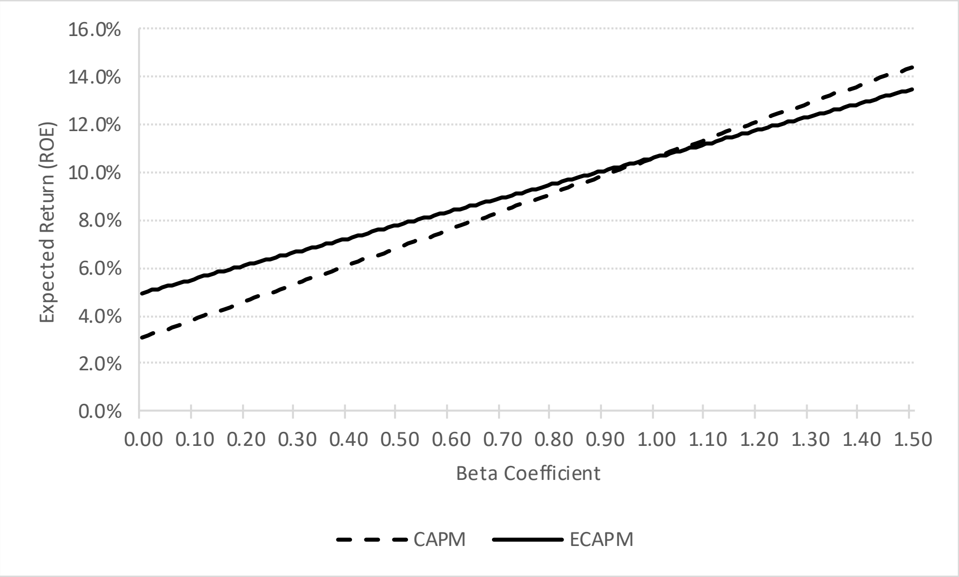
[76] *Ibid.*, at 190. Equations [3] and [4] tend to produce similar results when "alpha" is in the range of 1.00 percent to 2.00 percent. *See* Rebuttal Exhibit No.___(RBH-12). As Dr. Morin explains, alpha coefficients in that range are highly consistent with those identified in prior published research.

Chart 3: CAPM and ECAPM Expected Returns[77]



The ECAPM is an adjustment to the risk/return line which, as noted in Chart 3 above, is flatter than the CAPM assumes. That adjustment is required even with the use of adjusted Beta coefficients, such as those provide by Value Line. As Dr. Morin observes:

> Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. *The ECAPM and the use of adjusted betas comprised two separate features of asset pricing…Both adjustments are necessary*.[78]

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[77] *See* Rebuttal Exhibit No.___(RBH-12). The finding that the ECAPM is not an adjustment to the Beta coefficient also is clear in Equation [3] ($k_e = R_f + \alpha + \beta(MRP - \alpha)$), in which the alpha coefficient increases the intercept (the expected return when the Beta coefficient equals zero), and reduces the Market Risk Premium

[78] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 191 [*emphasis added*].

Q. PLEASE EXPLAIN WHY VALUE LINE ADJUSTS ITS BETA COEFFICIENTS.

A. Value Line's adjustment is based on the research of Marshall Blume, who found that "[n]o economic variable including the beta coefficient is constant over time."[79] Consistent with that finding, Blume observed a tendency of raw Beta coefficients to change gradually over time:

> …there is obviously some tendency for the estimated values of the risk parameter [beta] to change gradually over time. This tendency is most pronounced in the lowest risk portfolios, for which the estimated risk in the second period is invariably higher than that estimated in the first period. There is some tendency for the high risk portfolios to have lower estimated risk coefficients in the second period than in those estimated in the first. Therefore, the estimated values of the risk coefficients in one period are biased assessments of the future values, and furthermore the values of the risk coefficients as measured by the estimates of β_1 tend to regress towards the means with this tendency stronger for the lower risk portfolios than the higher risk portfolios. (emphasis added)

Blume proposed a correction for that "regression bias" to provide more accurate assessments of risk and, therefore, the Cost of Equity:

> For individual securities as well as portfolios of two or more securities, the assessments adjusted for the historical rate of regression are more accurate than the unadjusted or naïve assessments. Thus, an improvement in the accuracy of one's assessments of risk can be obtained by adjusting for the historical rate of regression even though the rate of regression over time is not strictly stationary.[80]

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[79] Marshall E. Blume, *On the Assessment of Risk*, The Journal of Finance, Vol. XXVI, No. 1, March 1971.

[80] *Ibid.*

Based on Blume's results, Value Line adjusts its "raw" Beta coefficients according to the following formula:

$$\beta_{adjusted} = .35 + (.67 \text{ x } \beta_{raw}) \quad [5]$$

Q. MR. BAUDINO ALSO ARGUES YOU HAVE NOT PROVIDED ANY EVIDENCE THAT INVESTORS USE THE "ALPHA" FACTOR ASSUMED IN YOUR ECAPM ANALYSIS.[81] HAVE YOU UNDERTAKEN ANY INDEPENDENT ANALYSES TO ADDRESS THAT ISSUE?

A. Yes. I first performed an analysis of excess returns produced by the CAPM, by Beta coefficient decile, over the ten years ended 2017. The analysis compared the observed returns of the companies in the S&P 500 Index to expected returns based on the CAPM. Observed returns were calculated as the total return for each company from the first day of a given year to the end of that year. The expected return for each company was calculated using the CAPM as applied to the following annual data: (1) a risk-free rate equal to the average 30-year Treasury yield for that year; (2) an adjusted Beta coefficient as of the beginning of the year using Bloomberg's standard calculation methodology (two years of weekly return data, using the S&P 500 Index as the comparison benchmark); and (3) a market return equal to the S&P 500 Index total return for that year. The companies were grouped into deciles each year based on their Beta coefficients, and the median excess return (or return deficiency) was calculated for each decile group. Excess returns were calculated as the observed return less the return implied by the CAPM. Chart 4 (below) summarizes those results.

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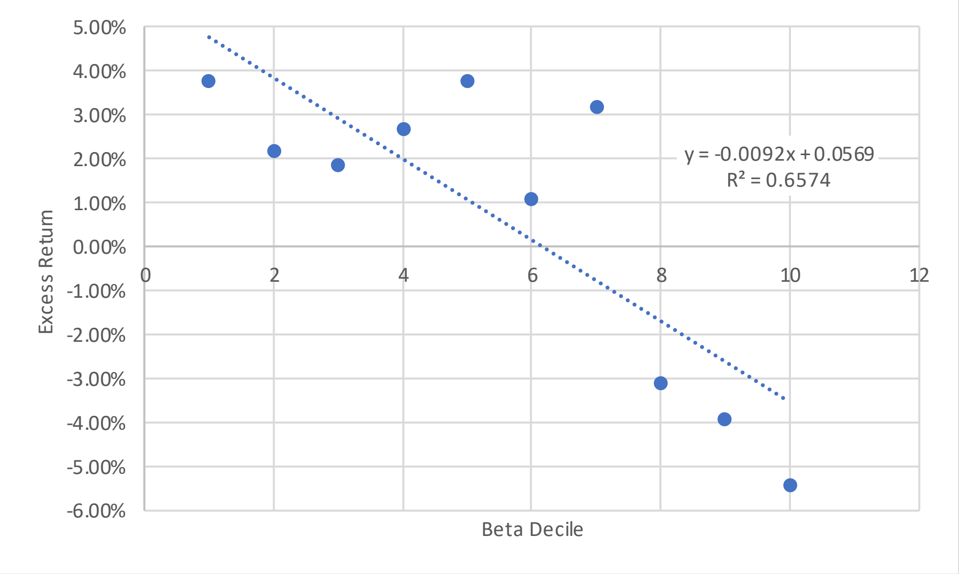
[81] Direct Testimony of Richard Baudino, at 48.

Chart 4: Excess Returns Under CAPM[82]



As Chart 4 demonstrates, the relationship between Excess Return and Beta coefficient deciles is strong, with deciles explaining nearly 66.00 percent of the Excess Return. Chart 4 also notes that at approximately the 6th decile, the expected excess return is approximately 1.00 percent, suggesting companies with Beta coefficients that are neither relatively large nor relatively small see minimal Excess Returns.

I then used the same data and calculated the Excess Return by reference to the ECAPM (as defined by Equation [4], above). Those results produce the same downward sloping relationship, but not to the same degree (see Chart 5, below).

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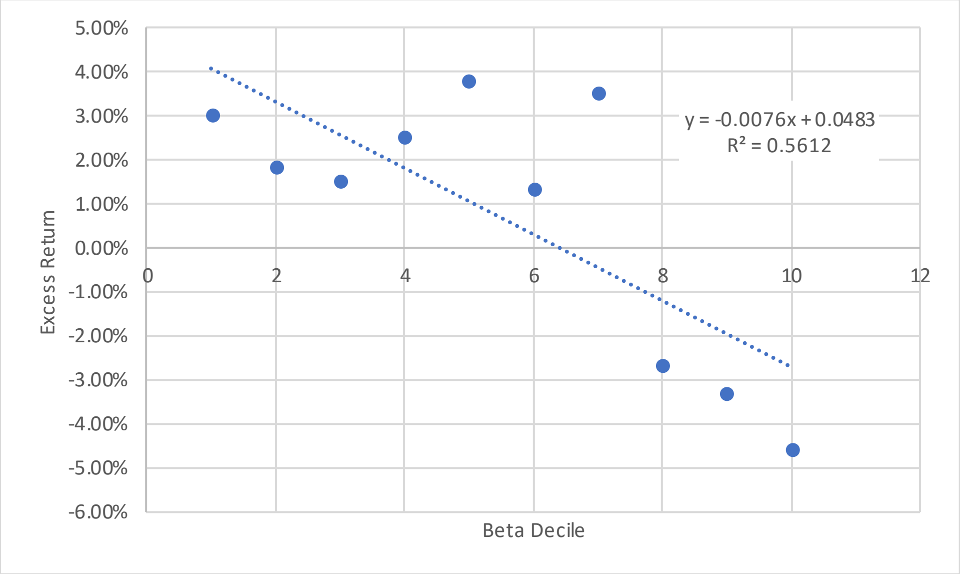
[82] Source: Bloomberg Professional.

Chart 5: Excess Returns Under ECAPM[83]



There are three observations to be drawn from the data presented in Charts 4 and 5. First, under the ECAPM the slope coefficient falls somewhat (relative to the CAPM), suggesting a flatter relationship between Beta coefficient deciles and the excess return. The flatter slope moves closer to the point at which the excess return is zero across all deciles. Second, the excess return values are somewhat moderated under the ECAPM; the high excess returns are lower than under the CAPM, and the low excess returns are higher. Again, that finding suggests the ECAPM mitigates, but does not solve the issue of the CAPM underestimating returns for low Beta coefficient firms. Third, the point at which the excess return is at its lowest remains at the sixth decile, indicating that firms with Beta coefficients toward the middle of the range earn the expected return.

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[83] Source: Bloomberg Professional.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THOSE ANALYSES?

A. First, Mr. Baudino's argument that the ECAPM assumes Value Line's Beta coefficients are "incorrect" is itself incorrect. As the analyses discussed above plainly demonstrate, because the ECAPM and adjusted Beta coefficients address two different aspects of security pricing it is entirely appropriate to apply both.

Second, Mr. Baudino's concern that I had not shown investor acceptance of the "alpha" factor assumed in my ECAPM analyses is misplaced. If anything, my assumed "alpha" factor is somewhat conservative; as Chart 5 demonstrates, the ECAPM mitigates the CAPM's tendency to under-estimate returns for low-Beta firms, but does not eliminate it. Consequently, I continue to believe the ECAPM is a reasonable method to be applied in this proceeding.

Bond Yield Plus Risk Premium Approach

Q. WHAT CONCERNS DOES MR. BAUDINO EXPRESS REGARDING YOUR BOND YIELD PLUS RISK PREMIUM ANALYSES?

A. Mr. Baudino suggests the Bond Yield Plus Risk Premium method is "imprecise and can only provide very general guidance," and notes that "[r]isk premiums can change substantially over time."[84] In the end, Mr. Baudino likens the approach to a "blunt instrument".[85] Regarding its application, Mr. Baudino disagrees with the use of projected Treasury yields in calculating the range of Risk Premium-based results.

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[84] Direct Testimony of Richard Baudino, at 51.

[85] *Ibid.*

Q. WHAT IS YOUR RESPONSE TO MR. BAUDINO'S OBSERVATIONS?

A. Turning first to Mr. Baudino's point that the Risk Premium can change over time, I agree. As noted in my Direct Testimony, there is a statistically significant negative relationship between long-term Treasury yields and the Equity Risk Premium. Given Mr. Baudino's observation that interest rates have declined since 2008, the Bond Yield Plus Risk Premium analysis provides an empirically and theoretically sound method of quantifying the relationship between the Cost of Equity and interest rates. That is, it provides a method to quantify the change Mr. Baudino has observed.

As to Mr. Baudino's notion that the approach is a "blunt instrument," I disagree. As shown in Chart 2 in my Direct Testimony, the R-squared of the Bond Yield Plus Risk Premium regression analysis is approximately 0.74, indicating a rather high degree of explanatory value. More importantly, and as shown in Table 1, the T-statistics for the intercept and the 30-year Treasury yield (the independent variable) both are highly statistically significant.

Table 1
Regression Coefficients for the Bond Yield Plus Risk Premium Analysis[86]

	Coefficient	T-Statistic	P-Value	Standard Error
Intercept	-0.025	-22.876	0.000	0.001
30-Year Treasury Yield	-0.027	-65.932	0.000	0.000

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[86] Source: Exhibit No.___(RBH-6).

Lastly, as Rebuttal Exhibit No.___(RBH-13) demonstrates, using the 95.00 percent confidence interval of the Bond Yield Plus Risk Premium regression's equation coefficient estimates, the ROE results range from 9.48 percent to 10.73 percent. That 125-basis point range is less than the range of Mr. Baudino's CAPM results (6.52 percent to 8.08 percent, or 156 basis points). Consequently, the Bond Yield Plus Risk Premium approach provides empirically and theoretically sound results that can be used, at minimum, to assess the wide range of ROE results produced by Mr. Baudino's analyses in general, and his 9.10 percent recommendation in particular.

Q. DO YOU AGREE WITH MR. BAUDINO'S CLAIM THAT INCLUDING RATE CASE RESULTS SINCE 1980 IS "AN IRRELEVANT EXERCISE"?[87]

A. No, I do not. The model focuses on the relationship between interest rates and the Equity Risk Premium, it does not view rate cases in isolation. The data used in my analyses cover several capital market and macroeconomic cycles, and captures the relationship between the Equity Risk Premium and interest rates over those cycles. There is no evidence that excluding data from my analysis would improve the model's ability to estimate expected returns.

Capital Market Environment and Other Considerations

Q. PLEASE BRIEFLY SUMMARIZE MR. BAUDINO'S DISCUSSION OF THE CAPITAL MARKET AND ITS EFFECT ON THE COST OF CAPITAL.

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[87] Direct Testimony of Richard Baudino, at 43.

A. Mr. Baudino acknowledges that interest rates have increased since the second half of 2016 and will likely continue raising rates into 2019.[88] Nonetheless, Mr. Baudino "firmly believe[s] that it would not be advisable for utility regulators to raise ROEs in anticipation of higher forecasted interest rates that may or may not occur."[89] Despite Mr. Baudino's belief, the Federal Open Market Committee ("FOMC") and investors both expect interest rates to rise in the short- and medium-term. To that point, the FOMC's *Projection Materials*, contain projections noting that thirteen of the sixteen FOMC participants expect the Federal Funds rate to exceed 3.00 percent by 2020, over the current range of 2.00 percent to 2.25 percent.[90]

The expected increase in the Federal Funds rate noted in the FOMC's *Projection Materials* is consistent with data reported by the CME Group, which indicates that investors see a 98.40 percent probability of a Federal Funds rate increase within the next year.[91] As to long-term rates, consensus projections gathered by *Blue Chip Financial Forecasts* suggest a 30-year Treasury yield of 3.60 percent by the first quarter of 2020 (a 41-basis point increase over the current 3.19 percent yield).[92] Because we are focused on understanding required returns from investors' perspectives, we should reflect data that is important to them. Mr. Baudino has provided no evidence that projected interest rates are of no consequence to investors.

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[88] *Ibid*., at 11.

[89] *Ibid*. [clarification added]

[90] Federal Reserve Board of Governors, *Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy*, September 2018.

[91] http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html?redirect=/trading/interest-rates/fed-funds.html, accessed September 27, 2018.

[92] *Blue Chip Financial Forecasts*, Vol. 37, No. 10, October 1, 2018 at 2, and Bloomberg Professional.

Q. MR. BAUDINO ALSO ARGUES THAT "EXPECTATIONS OF HIGHER FUTURE INTEREST RATES, IF ANY, ARE ALREADY LIKELY EMBODIED IN CURRENT SECURITIES PRICES, WHICH INCLUDE DEBT SECURITIES AND STOCK PRICES."[93] DO YOU AGREE WITH MR. BAUDINO'S ARGUMENT?

A. No, I do not. Mr. Baudino makes that argument in the context of market efficiency, suggesting that if markets are efficient, expectations regarding the direction and level of interest rates already are embedded in stock prices and Treasury yields. Mr. Baudino points to Dr. Morin's 2006 reference to the forecast accuracy of naïve extrapolations and "no-change" methods of projecting interest rates to support his position that there is no need to consider projected interest rates in setting the current ROE.[94]

Regarding the suggestion that the "no-change" method of projecting interest rates is appropriate in the current market, I do not believe that to be the case. Under the Federal Reserve's Quantitative Easing initiative, which was initiated after 2006 (that is, after Dr. Morin's book was published), approximately $4 trillion of U.S. agency debt and mortgage-backed securities were purchased with the specific intent of putting "downward pressure" on long-term interest rates.[95] Consequently, the observed Treasury yield in a given month likely would over-forecast the observed Treasury yield twelve months in the future. Conversely, when the Federal Reserve completed its Quantitative Easing program, it would be reasonable to assume the observed Treasury yield would under-forecast the yield twelve months in the future (as yields increase). That would be the case even though the Federal Reserve has not yet unwound the $4 trillion of assets it acquired during Quantitative Easing.

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[93] Direct Testimony of Richard Baudino, at 11.

[94] *Ibid.*, at 10.

The data relied on by Mr. Baudino's support that position. As shown in Table 2, from February 2007 through the end of Quantitative Easing (October 2015),[96] the 30-year Treasury yield over-forecast the twelve-month forward yield 71.00 percent of the time. After October 2015, current yields over-forecast future yields only 31.00 percent of the time; from 2017 through 2018, in only three of 21 months (about 14.00 percent of the time). That is, from 2017 through 2018, the "no-change" approach under-forecast Treasury yields in 18 of 21 months.

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[95] *See* Federal Reserve Bank of New York, Domestic Open Market Operations During 2012, April 2013, at 29.

[96] Because the Treasury Department discontinued issuances of 30-year Treasury bonds from March 2002 to January 2006, February 2007 was the first month for which the forecast yield was available.

Table 2
"No-Change" Forecast Error Observations[97]

# Observations	**Feb. 2007 – Oct. 2015**	**Nov. 2015 – August 2018**	**Jan. 2017 – August 2018**
Over-Forecast	75	11	3
Under-Forecast	30	24	18
Total	105	35	21
% Over-Forecast	71.00%	31.00%	14.00%
% Under-Forecast	29.00%	69.00%	86.00%

If Mr. Baudino wishes to consider current Treasury yields as measures of future rates, we can view the market's expectations based on the current yield curve. Those expected rates, often referred to as "forward yields" are derived from the "Expectations" theory, which states that (for example) the current 30-year Treasury yield equals the combination of the current five-year Treasury yield, and the 25-year Treasury yield expected in five years. That is, an investor would be indifferent to (1) holding a 30-year Treasury to maturity, or (2) holding a five-year Treasury to maturity, then a 25-year Treasury bond, also to maturity.[98] Here, we can apply Mr. Baudino's data to calculate the forward and current (interpolated) 25-year Treasury yield. If the forward 25-year Treasury yield exceeds the current 25-year yield, that relationship indicates expectations of future rate increases.

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[97] Source: Federal Reserve Board Schedule H.15.

[98] In addition to Expectations theory, there are other theories regarding the term structure of interest rates including: Liquidity Premium Theory, which asserts that investors require a premium for holding long term bonds; Market Segmentation Theory, which states that securities of different terms are not substitutable and, as such, the supply of and demand for short-term and long-term instruments is developed independently; and Preferred Habitat Theory, which states that in addition to interest rate expectations, certain investors have distinct investment horizons and will require a return premium for bonds with maturities outside of that preference.

Based on the data Mr. Baudino's Exhibit RAB-5, page 2, forward yields consistently exceeded current spot yields throughout 2018 (*see* Table 3, below). That is, just as economists' projections called for increased interest rates, so have forward Treasury yields.

Table 3
Forward vs. Interpolated 25-Year Treasury Yields[99]

	30-Year Treasury Yield	**Five-Year Treasury Yield**	**Forward 25-Year Treasury Yield**	**Interpolated 25-Year Treasury Yield**
March	3.09%	2.63%	3.18%	3.00%
April	3.07%	2.70%	3.14%	3.00%
May	3.13%	2.82%	3.19%	3.07%
June	3.05%	2.78%	3.10%	3.00%
July	3.01%	2.78%	3.06%	2.96%
August	3.04%	2.77%	3.09%	2.99%
Average	3.07%	2.75%	3.13%	3.00%

Because forward yields assume the current slope of the yield curve will remain constant going forward, they also assume the conditions supporting the current slope will remain constant. As discussed earlier, however, Federal monetary policy continues to evolve as short-term yields are increased, and the Federal Reserve's balance sheet is unwound. Consequently, the current yield curve may not fully reflect market expectations. Still, the increasing implied forward yields certainly are known and likely are considered by the professionals that contribute to the consensus long-term bond yield projections published by sources such as *Blue Chip Financial Forecasts*. In that case, forward yields would be reflected in economists' projections.

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[99] Source: Exhibit RAB-5, page 2 of 2. Please note that as the yield curve steepens, forward yields tend to increase.

Q. MR. BAUDINO ALSO POINTS TO INCREASES IN THE DOW JONES UTILITY AVERAGE, AND THE DECREASE IN UTILITY DEBT YIELDS AS SUPPORT FOR HIS 9.10 PERCENT ROE RECOMMENDATION.[100] WHAT IS YOUR RESPONSE TO MR. BAUDINO ON THOSE POINTS?

A. Regarding performance of the Dow Jones Utility Average ("DJU"), an important perspective is its performance relative to the overall market. As Chart 6 (below) points out, from January 2016 through August 2018 (the period included in Mr. Baudino's Table 1), the DJU significantly underperformed the overall market as measured by the Dow Jones Industrial Average ("DJI"). Notably, much of that underperformance occurred between November 2017 and March 2018, about the time the Tax Cut and Jobs Act ("TCJA") was enacted, and during which the major rating agencies noted its implications for utilities. As discussed in my Direct Testimony, a reasonable inference drawn from that data is that investors began to re-evaluate utilities relative to other sectors.[101] That inference, and the related conclusion that required returns for utilities has increased, is supported by Mr. Baudino's data.

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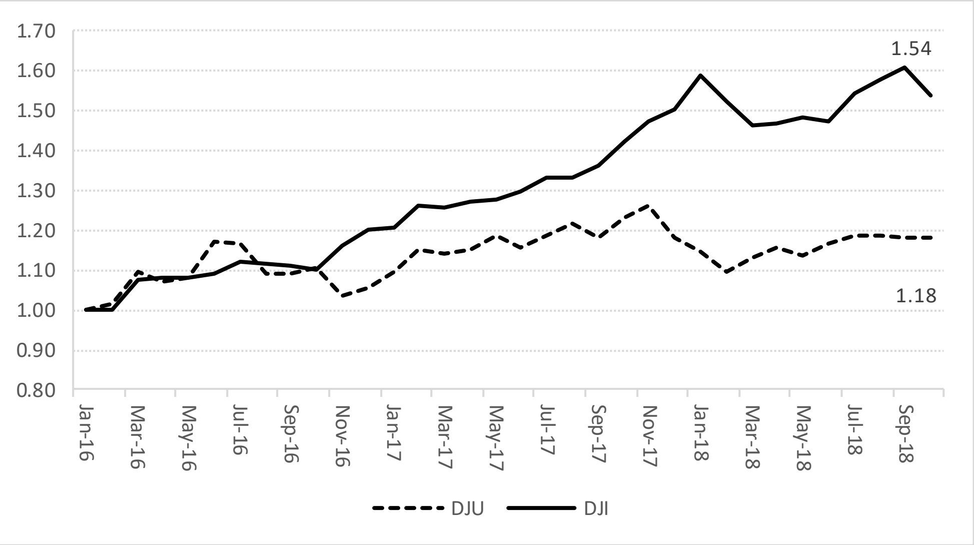
[100] Direct Testimony of Richard Baudino, at 11-13.

[101] Direct Testimony of Robert B. Hevert, at 54.

Chart 6: Relative Price Performance[102]



Q. MR. BAUDINO ARGUES THAT "DESPITE SHORT-TERM CHALLENGES TO CASH FLOW COVERAGES FROM THE [TCJA] UTILITIES STILL HAVE ROBUST VALUATIONS IN TERMS OF THEIR CURRENT PRICES."[103] HAVE YOU REVIEWED UTILITY STOCK PERFORMANCE IN THE CONTEXT OF THE TCJA'S ENACTMENT?

A. Yes, I have. A method frequently used to assess the implications of an event (such as the TCJA) on stock prices is to calculate "abnormal returns" before and after the event. Under that method, "abnormal returns" are defined as the difference between actual and expected returns. To the extent the cumulative abnormal returns deviate significantly from pre-event levels, we can conclude the event affected market price performance, and was meaningful to investors.

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[102] Source: Direct Testimony of Richard Baudino, at 12, Table 1; Yahoo!Finance.

[103] Direct Testimony of Richard Baudino, at 14. [clarification added]

To apply that approach, I defined the abnormal return on a given day as:

$$A_t = R_{i,t} - R_{m,t} \qquad [6]$$

where A_t is the Abnormal Return on day t, $R_{i,t}$ is the actual return for the proxy group[104] on day t, and $R_{m,t}$ is the expected return for the proxy group defined in Equation [7] below.

$$R_{m,t} = \alpha_t + \beta_{m,t} \qquad [7]$$

The expected return, $R_{m,t}$, (sometimes referred to as the "market-adjusted return") is based on a regression equation in which the Dow Jones Utility Average index's daily returns are the dependent variable, and the market's daily return (measured by the Dow Jones Industrial Average) is the explanatory variable. Because it relies on market-adjusted returns, the approach controls for factors that, like the TCJA, affect companies across market sectors. Consistent with Value Line's approach for calculating Beta coefficients, I applied the regression (i.e., Equation [7]) over five years, using daily (rather than weekly) returns. The equation and slope coefficient both were statistically significant (*see* Table 4, below).

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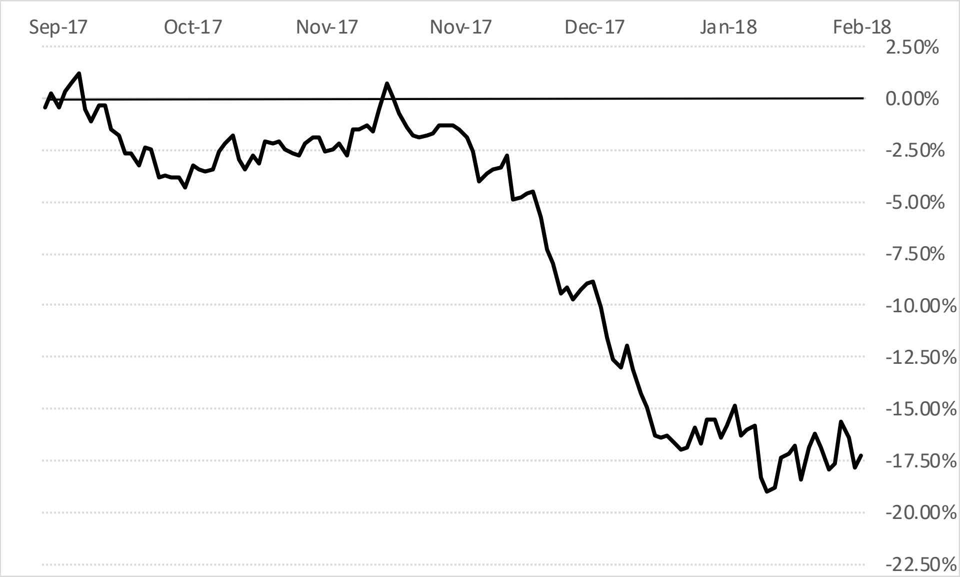
[104] Calculated as an index. Source: S&P Global Market Intelligence.

Table 4: Market Model Regression Statistics

	Slope	Intercept
Coefficient	0.4134	0.0002
Std. Err.	0.0304	0.0002
R-Square	0.1282	
F-Stat	185.212	
t-Stat	13.6093	0.6861

To determine whether the TCJA likely affected the proxy companies' stock valuations, I considered the "event date" to be December 1, 2017. Because it pre-dates the TCJA's enactment, the event date provides for the likelihood that equity investors were aware of, and began to consider how the TCJA may affect utility risks before the TCJA became law. I then calculated the cumulative abnormal return for each day over a window that spanned from September 1, 2017 to March 1, 2018 (that is, approximately three months before and after December 1, 2017). Chart 7 (below) provides the cumulative abnormal return over that period (*i.e.*, negative 17.23 percent).

Chart 7: Dow Jones Utility Average Cumulative Abnormal Return[105]



Q. WHAT CONCLUSIONS DO YOU DRAW FROM CHART 7?

A. In the pre-event window (September 1, 2017 to November 30, 2017), the cumulative abnormal return was about negative 1.50 percent; during the post-event window (from December 1, 2017 to March 1, 2018), it was negative 15.73 percent. Controlling for market-wide events, the TCJA clearly has had a strong negative effect on utility company valuation levels. We therefore reasonably can conclude that aside from actions taken by rating agencies, the TCJA meaningfully – and negatively – affected utility stock prices.

Q. WHAT IS YOUR RESPONSE TO MR. BAUDINO'S OBSERVATION THAT UTILITY BOND YIELDS WERE LOWER IN AUGUST 2018 THAN JANUARY 2016?

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[105] Source: S&P Global Market Intelligence.

A. Regarding Mr. Baudino's observation that utility bond yields were lower in August 2018 than January 2016, there are several points to consider. First, over time credit spreads tend to be inversely related to Treasury yields. Data from Mr. Baudino's Table 1 display that relationship; credit spreads were negatively and significantly related to Treasury yields (*see* Table 5, below).

Table 5
Regression Statistics [106]

R Square	0.266	
F Stat	10.874	T Stat
Intercept	2.482	6.930
Treasury Yield	-0.417	-3.298

In 2016, the average Treasury yield and credit spreads were 2.60 percent and 1.51 percent, respectively. By 2018, the average Treasury yield increased to 3.05 percent, and the credit spread fell to 1.19 percent, from a low of 1.02 percent (February) to a high of 1.37 percent (July). Based on the movement of Treasury yields and credit spreads since 2016, there is no reason to conclude utility bond yields indicate a lower Cost of Equity, as Mr. Baudino suggests. If anything, we may conclude that because both Treasury yields and credit spreads have increased during 2018, investors' perceptions of utility risk also have increased.

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[106] Source: Direct Testimony of Richard Baudino, at 12, Table 1. Here, credit spreads are the dependent variable and the Treasury yield is the explanatory variable.

Q. ARE CREDIT RATINGS AND CREDIT SPREADS DIRECT MEASURES OF THE RISKS FACED BY EQUITY INVESTORS?

A. No, they are not. It is important to bear in mind that although they reflect business and financial risk, credit ratings are opinions regarding the subject company's financial capacity to pay its financial obligations as they come due and payable. As S&P notes:

> An S&P Global Ratings issuer credit rating is a forward-looking opinion about an obligor's overall creditworthiness. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due.[107]

That is, credit ratings speak to overall creditworthiness from the perspective of debtholders. The claims of equity holders, the subject of Mr. Baudino's testimony, are subordinate to those of debt holders. Further, whereas debt has a finite term, equity is perpetual. The risks associated with common equity therefore do not fully correspond to the risks of owning bonds; the two have common considerations, but only to a point. Although credit ratings and credit spreads may be broad indicators of relative risk in the debt markets, they are not a full measure of equity risk and we cannot draw firm inferences for one from the other.

That certainly is the case for the proxy companies and DCF estimates. To assess the relationship between credit ratings and the Cost of Equity, I calculated the individual company Constant Growth DCF results, based on the dividend yields and growth rates provided in ORS Exhibits RAB-3 and RAB-4 (page 1). By assigning numeric scores to credit ratings, we can determine whether those scores are related to DCF estimates. Here, I have assigned higher number scores to better credit ratings. If there is a meaningful relationship between credit ratings and DCF estimates, it would be negative (that is, the DCF estimate increases as credit ratings fall). Because the credit rating scores are ordinal (they measure relative rank), I plotted one relative to the other, and calculated the rank order correlation between the two.[108] Chart 8 (below) indicates that there is an insignificant, positive relationship.

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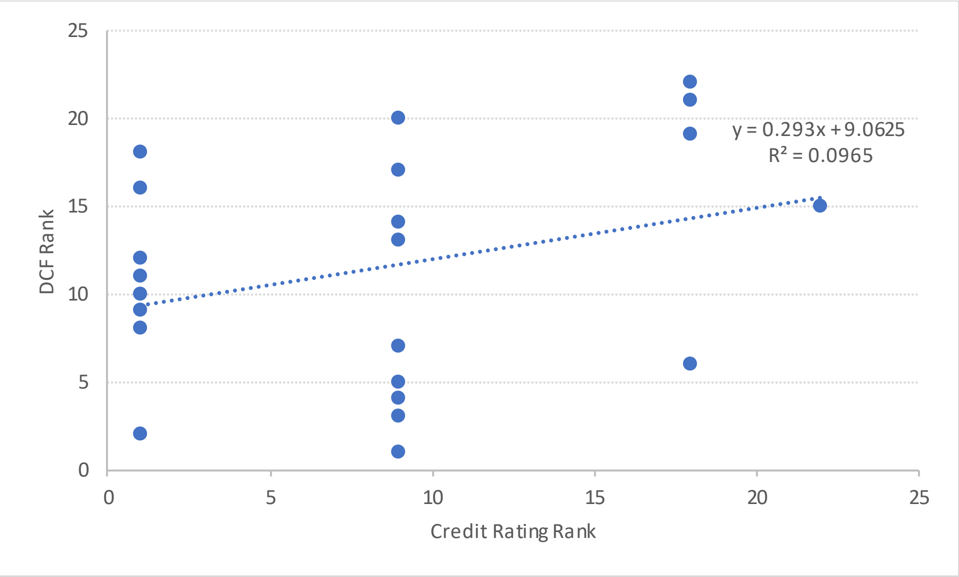
[107] https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352

Chart 8
DCF Result vs. Credit Rating (Rank Order)[109]



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[108] That is, I ranked the DCF estimate and the credit rating score for each company within the proxy group.

[109] Source: Exhibit RAB-3, Exhibit RAB-4.

Chart 8 also demonstrates that the R^2 is only 0.097, indicating the credit rating rank has limited ability to explain the DCF result rank. As expected, the relationship is statistically insignificant.

Q. MR. BAUDINO ALSO COMPARES HIS 9.10 PERCENT RECOMMENDATION TO THE OPERATING COMPANY MEDIAN EARNED ROE PRESENTED IN CHART 8 OF YOUR DIRECT TESTIMONY AND ARGUES THAT COMPARISON SUPPORTS HIS RECOMMENDATION AND DISCREDITS YOURS.[110] DO YOU AGREE?

A. No, I do not. Mr. Baudino's argument assumes the historical Earned Return on Average Common Equity should equal the investor-required Cost of Equity. That argument, together with Mr. Baudino's reliance on the DCF method, assumes the Market/Book ("M/B") ratio for utilities should be 1.00. That is, the DCF model can be rewritten to express the M/B ratio as follows: [111]

$$\frac{M}{B} = \frac{ROE\text{-}G}{k\text{-}G} \qquad [8]$$

where ROE is the return on book equity, *k* is the risk-adjusted discount rate, and *g* is the long-term growth rate in dividends per share. Rearranging Equation [8] produces the familiar "Gordon" model:

$$P_0 = \frac{D_1}{(k\text{-}g)} \qquad [9]$$

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[110] Direct Testimony of Richard Baudino, at 33.

[111] B. Branch, A. Sharma, C. Chawla, and F. Tu, *An Updated Model of Price-to-Book*, Journal of Applied Finance, No. 1 (2014).

and the Constant Growth DCF model contained in Mr. Baudino's testimony:

$$k=\frac{D_1}{P}+g \qquad [\textit{see}, \text{Equation [1] above}]$$

Mr. Baudino's assumed relationship between the accounting Return on Equity and the Cost of Equity therefore falls from the Constant Growth DCF model itself; one cannot be assumed without the other. Consequently, any inferences drawn regarding the relationship between the Cost of Equity and the Earned Return on Common Equity require the explicit acceptance of all assumptions underlying the Constant Growth DCF model, including a constant dividend growth rate in perpetuity, and the constancy of the DCF result. As explained earlier, taken together those assumptions are quite restrictive and call into question Mr. Baudino's inherent assumption that the historical earned returns are a measure of expected returns.

Q. ARE YOU AWARE OF ANY PUBLISHED RESEARCH THAT ADDRESSES THE ISSUE OF M/B RATIOS IN THE CONTEXT OF THE CONSTANT GROWTH DCF MODEL?

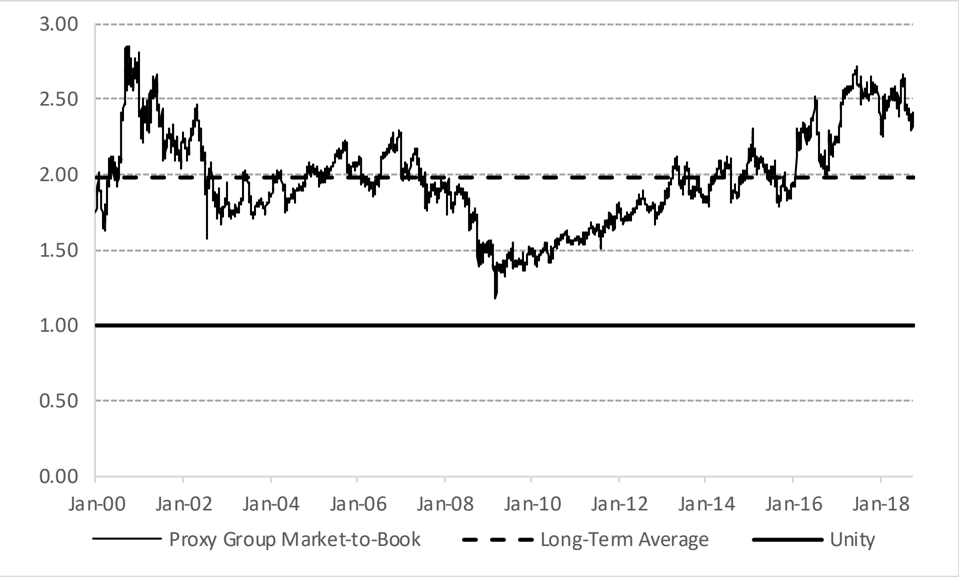
A. Yes. As noted above, if we accept all assumptions that underlie the Constant Growth DCF model, Equation [8] suggests the M/B ratio will equal 1.00 when the Cost of Equity equals the Return on Average Common Equity. Branch *et al.* point out that M/B is generally greater than or equal to one because the value of the firm as a going concern (price per share) generally exceeds the liquidation value (book value per share) and "…firms having going concern values greater than their liquidation values (most firms) and firms having finite prices (all firms) should have

ROE > R > G."[112] Taken from that perspective M/B ratios in excess of unity should not be surprising: if the liquidation value exceeds the market value, the company would be liquidated.

Q. HAVE M/B VALUES GENERALLY EXCEEDED 1.00 FOR THE PROXY GROUP?

A. Yes, they have. As Chart 9 (below) demonstrates, since 2000 the proxy group M/B ratio has been 1.97; it has never fallen to unity.

Chart 9
Proxy Group Average M/B Ratio Over Time[113]



If investors, over many years and across many companies, believed the returns they expected had so significantly exceeded the returns they required, they would adjust their requirements. Under Mr. Baudino's construct, the disequilibrium between expected and required returns would dissipate, and take with it the disequilibrium between market and book values. But that has not occurred.

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[112] Branch et al. (2014), at 78. [clarification added] Here, R = the Cost of Equity, and G = growth.

[113] Source: Source: S&P Global Market Intelligence. Calculated as an index.

Lastly, if Mr. Baudino's theory held, it would follow that the utility commissions that authorized the proxy companies' return have been consistently and significantly wrong. But Mr. Baudino has provided no data to explain why that would be the case.

Q. DO YOU HAVE ANY FURTHER OBSERVATIONS ON THIS ISSUE?

A. Yes. As Mr. Baudino acknowledges, the Cost of Equity reflects expectations – it is forward-looking.[114] Consequently, if he is going to consider earned Returns on Common Equity, Mr. Baudino also should consider the returns projected by Value Line.[115] As Table 6, below indicates, the median expected return for the proxy group is 10.50 percent, well above his recommendation, but well within my recommended range.

Table 6
Projected Return on Common Equity (2021 – 2023)[116]

		Return On Common Equity
ALLETE, Inc.	ALE	9.00%
Alliant Energy Corporation	LNT	11.50%
Ameren Corporation	AEE	10.50%
American Electric Power Company, Inc.	AEP	10.50%
Avangrid, Inc.	AGR	6.00%

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[114] *See* Direct Testimony of Richard Baudino, at 19.

[115] Mr. Baudino relies on Value Line for inputs to his DCF and CAPM analyses.

[116] Source: Value Line as of October 12, 2018.

Black Hills Corporation	BKH	10.00%
CMS Energy Corporation	CMS	14.00%
DTE Energy Company	DTE	11.00%
Duke Energy Corporation	DUK	8.50%
El Paso Electric	EE	9.00%
Hawaiian Electric Industries, Inc.	HE	10.00%
IDACORP, Inc.	IDA	9.00%
NextEra Energy, Inc.	NEE	13.00%
NorthWestern Corporation	NWE	9.50%
OGE Energy Corp.	OGE	11.50%
Otter Tail Corporation	OTTR	10.50%
Pinnacle West Capital Corporation	PNW	10.50%
PNM Resources, Inc.	PNM	9.00%
Portland General Electric Company	POR	9.00%
Southern Company	SO	12.00%
WEC Energy Group, Inc.	WEC	12.00%
Xcel Energy Inc.	XEL	10.50%
Average		10.30%
Median		10.50%

IV. CONCLUSIONS AND RECOMMENDATIONS

Q. WHAT ARE YOUR OVERALL CONCLUSIONS AND RECOMMENDATIONS?

A. My updated analytical results are provided in Rebuttal Exhibit No.___(RBH-1) through Rebuttal Exhibit No.___(RBH-6). Based on the analyses discussed throughout my Rebuttal Testimony, including my updated analytical results, I continue to believe the reasonable range of ROE estimates is from 10.25 percent to 11.00 percent and within that range, 10.75 percent is a reasonable and appropriate estimate of the Company's Cost of Equity.

Q. DOES YOUR 10.75 PERCENT ROE RECOMMENDATION REFLECT THE ADDITIONAL RETURN LIKELY REQUIRED BY EQUITY INVESTORS IF THE ORS PLAN IS ADOPTED?

A. No, it does not. In my Direct Testimony, I explained that to my knowledge there has not been an ROE as low as 6.67 percent authorized for an electric utility.[117] My Direct Testimony further noted that the additional risks associated with a *pro forma* return that low would cause equity investors to increase their required returns. I understand Ms. Griffin has calculated the *pro forma* ROE associated with the ORS plan and has found the return to be 7.39 percent, after writing down approximately $2.5 billion in assets.[118] As in my Direct Testimony, I have developed a range of the likely additional return required by equity investors, if the ORS plan were to be adopted, based on credit spreads and differences in Beta coefficients.[119]

Turning first to credit spreads, I have updated the analyses discussed in my Direct Testimony, which calculated the difference in BBB and BB-rated utility debt yields from June 2017 through October 12, 2018. That average difference, 213 basis points, is seven basis points below the 220 basis point average credit spread noted in my Direct Testimony.[120] In my view, 220 basis points remains a reasonable lower-bound estimate of the incremental required return even though (as discussed in my Direct Testimony) the difference in credit spreads likely is a conservative estimate of the increase in the Cost of Equity.

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[117] Direct Testimony of Robert B. Hevert, at 71.

[118] But for the asset write-down, the *pro forma* ROE would be even lower.

[119] *See* Direct Testimony of Robert B. Hevert, at 72 – 76.

[120] BBB = 4.3206 percent. BB = 6.4475 percent. Difference (6.4475 percent – 4.3206 percent) = 2.1269 percent, or 213 basis points. Source: Bloomberg Professional

The second method considers the difference in the proxy group average Value Line Beta coefficient and the Beta coefficients of companies in Value Line's "Power" and "Diversified Natural Gas" sectors with Financial Strength Ratings of "B" or lower.[121] The updated results, which are provided in Table 7 (below) suggest a Beta coefficient of 1.15 continues to be a reasonable measure of the Value Line Beta coefficient if the ORS plan is adopted.

Table 7
Average Beta Coefficients[122]

OVERALL	AVERAGE	1.12
	Median	1.20
	Std. Dev.	0.76
	Skew	0.06
	# Companies	85
FINANCIAL STRENGTH RATING = B	Average	1.18
	Median	1.15
	Std. Dev.	0.65
	Skew	-0.44
	# Companies	21

As shown in Rebuttal Exhibit No.___(RBH-5), the proxy group average Value Line Beta coefficient is about 0.641; the difference between 1.15 and 0.641 (0.509) reflects incremental systematic risk. Using an expected Market Risk

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[121] *See* Direct Testimony of Robert B. Hevert, at 75 – 76.

[122] Source: Value Line.

Premium of 12.80 percent[123], the incremental Cost of Equity would be about 652 basis points (6.52 percent = 0.509 x 12.80 percent).

On balance, it is my opinion that the additional return required by equity investors if the ORS plan is adopted will be in the range of 220 to 650 basis points, indicating a likely Cost of Equity in the range of 12.95 percent to 17.25 percent. For the reasons discussed in my Direct and Rebuttal Testimony, I believe the Company's Cost of Equity would lie toward the upper end of that range.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

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[123] The approximate average of the Value Line and Bloomberg-based Market Risk Premia. *See* Rebuttal Exhibit No.___ (RBH-5).